CLAIMS

What is claimed is:

1. A wireless communication system comprising:

a first subsystem having a first subscriber data interface and a first digital interface, wherein said first subscriber data interface provides an interface compatible with a first general purpose protocol and said first digital interface provides an interface compatible with a protocol other than said first general purpose protocol; and

a second subsystem having a second subscriber data interface and a second digital interface, wherein said second subscriber data interface provides an interface compatible with a wireless protocol, and wherein said second digital interface is coupled to said first digital interface to provide communication of subscriber data between said first subscriber data interface and said second subscriber data interface.

2. The system of claim 1, wherein said general purpose protocol comprises a protocol selected from the group consisting of T1, T3, E1, E3, OC-1, OC-3, OC-12, and ISDN.

3. The system of claim 1, wherein said general purpose protocol comprises Ethernet.

4. The system of claim 1, wherein said general purpose protocol comprises SONET.

5. The system of claim 1, wherein said first subsystem comprises an indoor unit subsystem and said second subsystem comprises an outdoor unit subsystem.

6. The system of claim 1, wherein said first subsystem provides only digital processing of said subscriber data.

7. The system of claim 6, wherein said first subsystem comprises an OFDM digital modem.

8. The system of claim 6, wherein said first subsystem comprises a digital multiplexer.

9. The system of claim 6, wherein said first digital interface comprises a fiber optic interface.

10. The system of claim 1, wherein said second subsystem provides all analog processing of said subscriber data provided by said system.

11. The system of claim 10, wherein said second subsystem comprises a frequency converter for conversion between an intermediate frequency and a radio frequency.

12. The system of claim 10, wherein said second subsystem comprises at least one amplifier.

13. The system of claim 10, wherein said second subsystem comprises a digital multiplexer.

14. The system of claim 10, wherein said second digital interface comprises a fiber optic interface.

15. The system of claim 1, wherein said communication of subscriber data via said first and second digital interfaces is synchronous.

16. The system of claim 15, wherein said synchronous communication of subscriber data comprises synchronous overhead added to said subscriber data by a transmitting one of said first and second subsystems.

17. The system of claim 16, wherein said synchronous overhead comprises training sequence bits.

18. The system of claim 16, wherein said synchronous overhead comprises timing bits.

19. The system of claim 15, wherein said synchronous communication of subscriber data comprises use of a synchronous protocol.

20. The system of claim 19, wherein said synchronous protocol comprises SONET.

21. The system of claim 19, wherein said synchronous protocol comprises resilient packet ring access.

22. The system of claim 1, further comprising a third subsystem having a third subscriber data interface and a third digital interface, wherein said third subscriber data interface provides an interface compatible with said wireless protocol, and wherein said third digital interface is coupled to said first digital interface to provide communication of subscriber data between said first subscriber data interface and said third subscriber data interface.

23. The system of claim 22, wherein said third digital interface is coupled to said first digital interface through said second digital interface.

24. The system of claim 23, wherein said third digital interface is also coupled to said first digital interface via a connection not made through said second digital interface.

25. The system of claim 22, wherein said second digital interface and said third digital interface are coupled to said first digital interface through a multi-port device.

26. The system of claim 25, wherein said multi-port device comprises a data router.

27. The system of claim 25, wherein said multi-port device comprises a data switch.

28. The system of claim 1, wherein said first digital interface comprises multi-port data routing functionality.

29. The system of claim 1, wherein said first digital interface comprises multi-port data switching functionality.

30. The system of claim 1, wherein said second digital interface comprises multi-port data routing functionality.

31. The system of claim 1, wherein said second digital interface comprises multi-port data switching functionality.

32. The system of claim 1, wherein said first and second subscriber data interfaces provide broadband interfaces.

33. A method for providing wireless subscriber data signal processing, said method comprising:

providing a first signal processing subsystem providing only digital signal processing with respect to said subscriber data signal;

providing a second signal processing subsystem providing analog and digital signal processing with respect to said subscriber data signal; and

coupling said first signal processing subsystem and said second signal processing subsystem using a digital link.

34. The method of claim 33, wherein said digital link comprises a fiber optic link.

35. The method of claim 33, wherein said first signal processing subsystem comprises an indoor unit and said second signal processing subsystem comprises an outdoor unit.

36. The method of claim 33, further comprising:

coupling said first signal processing subsystem to a subscriber data communication backbone.

37. The method of claim 36, wherein said communication backbone comprises a network selected from the group consisting of:

the Internet;

the PSTN;

a LAN;

a WAN; and

a MAN.

38. The method of claim 36, wherein an interface protocol utilized in coupling said first signal processing subsystem to said data communication backbone comprises a protocol selected from the group consisting of T1, T3, E1, E3, OC-1, OC-3, OC-12, and ISDN.

39. The method of claim 36, wherein an interface protocol utilized in coupling said first signal processing subsystem to said data communication backbone comprises Ethernet.

40. The method of claim 36, wherein an interface protocol utilized in coupling said first signal processing subsystem to said data communication backbone comprises SONET.

41. The method of claim 36, wherein an interface protocol utilized in coupling said first signal processing subsystem to said data communication backbone comprises resilient packet ring access.

42. The method of claim 33, further comprising:

coupling said second signal processing subsystem to a wireless subscriber data communication channel.

43. The method of claim 33, further comprising:

providing a third signal processing subsystem providing analog and digital signal processing with respect to said subscriber data signal; and

coupling said first signal processing subsystem and said third signal processing subsystem using said digital link.

44. The method of claim 43, further comprising:

coupling said first signal processing subsystem and said third signal processing subsystem using another digital link.

45. The method of claim 44, wherein said digital link comprises a fiber optic link and said another digital link comprises a fiber optic link.

46. The method of claim 44, further comprising:

configuring communication via said digital link and said another digital link to provide a resilient packet ring communication topology between said first signal processing subsystem and each of said second and third subsystems.

47. The method of claim 33, further comprising:

communicating a synchronous signal via said digital link to enable media access control to be provided by said first signal processing subsystem with respect to a physical link utilized by said second signal processing subsystem.

48. A wireless communication system comprising:

an indoor unit having a broadband backbone interface and a first fiber optic interface;

an outdoor unit having a wireless interface and a second fiber optic interface; and

a fiber optic cable coupled to said first fiber optic interface and said second fiber optic interface and providing synchronous communication of subscriber data between said indoor unit and said outdoor unit.

49. The system of claim 48, wherein said backbone interface provides a broadband interface compatible with a general purpose protocol.

50. The system of claim 48, wherein said wireless interface provides data communication in a frequency band between approximately 5 GHz and 6 GHz.

51. The system of claim 50, wherein said frequency band is a frequency band of the Unlicensed National Information Infrastructure frequency bands.

52. The system of claim 48, wherein said wireless interface provides data communication in a frequency band between approximately 2 GHz and 3 GHz.

53. The system of claim 52, wherein said frequency band is a frequency band of the Multichannel Multipoint Distribution System frequency bands.

54. The system of claim 52, wherein said frequency band is a frequency band of the Wireless Communications Service bands.

55. The system of claim 48, wherein said frequency band is a frequency band of the 3.5 GHz frequency bands.

56. The system of claim 48, wherein said indoor unit comprises:

a digital modem coupled to said backbone interface;

a digital multiplexer coupled to said digital modem; and

a fiber optic interface coupled to said digital multiplexer.

57. The system of claim 56 wherein said digital modem is an OFDM digital modem.

58. The system of claim 48, wherein said outdoor unit comprises:

a frequency converter coupled to said wireless interface for conversion of carrier frequency between an intermediate frequency and a radio frequency;

a digital multiplexer coupled to said frequency converter; and

a fiber optic interface coupled to said digital multiplexer.

59. The system of claim 48, further comprising:

another outdoor unit having a wireless interface and a third fiber optic interface, wherein said fiber optic cable further provides synchronous communication of subscriber data between said indoor unit and said another outdoor unit.

60. The system of claim 59, further comprising:

another fiber optic cable coupled to said first fiber optic interface and said third fiber optic interface and providing synchronous communication of subscriber data between said indoor unit and said another outdoor unit.

61. The system of claim 48, further comprising:

another fiber optic cable coupled to said first fiber optic interface and said second fiber optic interface and providing synchronous communication of subscriber data between said indoor unit and said outdoor unit.